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SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT  
NTS EVENT "CHIBERTA", 20 DECEMBER 1975

TELEDYNE GEOTECH

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**SPECIAL DATA COLLECTION SYSTEM EVENT REPORT  
NTS Event "CHIBERTA", 20 December 1975**

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**March 1976**

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312 Montgomery Street, Alexandria, Virginia 22314**



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## SDCS EVENT REPORT NO. 77

NTS Event "CHIBERTA", 20 December 1975

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

	"P" Arrival	Origin Time	Lat.	Long.	$m_b$	$M_s$
NORSAR	20:11:32.5	20:00:00.7	38 N	116 W	5.7	N/A
Hagfors	20:11:40.7	20:00:03	38 N	116 W	5.9	N/A

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

20:00:01.8    37.2N    116.0W    5.5    5.0

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at all SDCS stations, LASA and NORSAR. Operating gains of the CPSO short-period channels were unknown. Horizontal channels at WH2YK, RK-ON, HN-ME and FN-WV were rotated.

Long-period signals were recorded at all SDCS stations. The LP vertical channel at CPSO was not responding properly. Polarity of the LP radial channel at RK-ON was reversed; to correct this, a mathematical inversion of the LP radial data was performed before the horizontal channels were rotated. Horizontal LP channels at all SDCS stations were rotated. ALPA and NORSAR long-period data were not recoverable. LASA long-period data were not included because of complicated recovery procedures.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA and NORSAR short-period plots. LASA SP scaling factors are millimicrons per inch. Scaling factors are not reported for NORSAR short-period.

## STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES		ELEVATION METERS	INSTRUMENTATION	
		DEG	MN SECS		SHORT-PERIOD	LONG-PERIOD
ALPA	Alaska	65 14	00.0 N 147 44 36.0 W	626	None	31300
CPSO	McMinnville, Tennessee	35 35	41.4 N 085 34 13.5 W	574	6480 V 7515 H	SL210 V SL220 H
FN-WV	Franklin, West Virginia	38 32	58.0 N 079 30 47.0 W	910	KS36000	KS36000
LASA	Billings, Montana	46 41	19.0 N 106 13 20.0 W	744	HS10	7505A V 8700C H
HN-ME	Houlton, Maine	46 09	43.0 N 067 59 09.0 W	213	KS36000	KS36000
NORSAR	Kjeller, Norway	60 49	25.4 N 010 49 56.5 E	379	HS10	7505A V 8700C H
RN-ON	Red Lake, Ontario	50 50	20.0 N 093 40 20.0 W	366	18300	SL210 V SL220 H
WH2YK	White Horse, Yukon	60 41	41.0 N 134 58 02.0 W	853	18300	SL210 V SL220 H

Note: The orientation of the radial instruments at FN-WV is assumed to be  $16^\circ + 5^\circ$  based on empirical data (event recordings). Rotation, where performed, is referenced to this azimuth and may be questionable.

## HYPOCENTER DETERMINATION

INPUT FOR EVENT 20 DEC 75  
 20:00:00.0 37.000N 116.000W 0KM.

STA.	ARRIVAL	RESIDUALS		DIST.	AZ.
		CALC	REST		
LAO	20 02 52.5	-0.1	0.1	11.9	34.5
RK-CN	20 04 45.6	0.2	-0.1	21.0	42.4
CPSO	20 05 22.1	0.1	0.4	24.5	84.5
WH2YK	20 05 39.3	0.1	0.3	26.4	338.9
FN-WV	20 05 59.9	-0.3	-0.2	28.7	76.0
HN-ME	20 07 07.8	0.2	-0.0	36.5	60.3
NAO	20 11 32.5	-0.2	-0.5	73.1	24.2

## 67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
20:00:07.8	37.350N	115.906W	35. CALC	0.2	4	7
20:00:01.8	37.206N	116.015W	0. REST	0.3	2	7

CALC				REST			
1 . 1				1 . 1			
0	.	0		0	.	0	
0	0.3	2		0	0.3	2	
.	.	.	.	.	.	.	.
0	0.0	0	0	0	0.0	0	0
0	.	0		0	.	0	
0	.	0		0	.	0	

CHI2 COVERAGE ELIIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.69  
 MAJOR 61.5KM. MINOR 37.9KM. AZ= 31 AREA= 7312 SQ.KM. REST

## DATA SUMMARY

INPUT FOR EVENT 20 DEC 75  
 20:00:00.0 37.000N 116.000W CMM.

STA.	PHASE	ARRIVAL TIME	INST	PER	A/Z	MAGNITUDE		DIR	DIST
						MB	MS		
LAO M	EP	20 02 52.5	SAB	1.4	481.	6.49			11.9
RK-ON	EP	20 04 45.6	SPZ	0.9	1288.	5.91			21.0
RK-ON	LQ	20 12 38.0	LPT	17.0	56.				
RK-ON	LR	20 13 27.0	LPZ	15.0	288.		4.90		21.0
CPSO	EP	20 05 22.1	SPZ	0.9	9999.				
CPSO	LQ	20 13 35.0	LPT	29.0	33.				
WH2YK	EP	20 05 39.3	SPZ	0.8	66.	4.96			26.4
WH2YK	LQ	20 14 51.0	LPT	20.0	41.				
WH2YK	LR	20 17 00.0	LPZ	16.0	207.		4.86		26.4
PN-WV	EP	20 05 59.9	SPZ	0.9	47.	4.97			28.7
PN-WV	LQ	20 15 49.0	LPT	16.0	72.				
PN-WV	LR	20 18 04.0	LPZ	17.0	268.		5.01		28.7
HN-ME	EP	20 07 07.8	SPZ	1.2	300.	5.73			36.5
HN-ME	LQ	20 19 50.0	LPT	15.0	26.				
HN-ME	LR	20 22 19.0	LPZ	15.0	41.		4.29		36.5
NAO	EP	20 11 32.5	AB	1.2	140.	5.73			73.1

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LP MAG	LP SDV	LP STA
20:00:07.8	37.350N	115.906W	36. CALC	5.43	0.49	5	5.00*****		1
20:00:01.8	37.206N	116.015W	0. REST	5.46	0.46	5	5.01*****		1

LAO NOT USED IN CALC RUN SP AVG. MAG.

LAO NOT USED IN REST RUN SP AVG. MAG.

Short-period magnitudes ( $m_b$ ) used in averaging are restricted to those recorded at distances between 20 and 110 degrees from the epicenter.

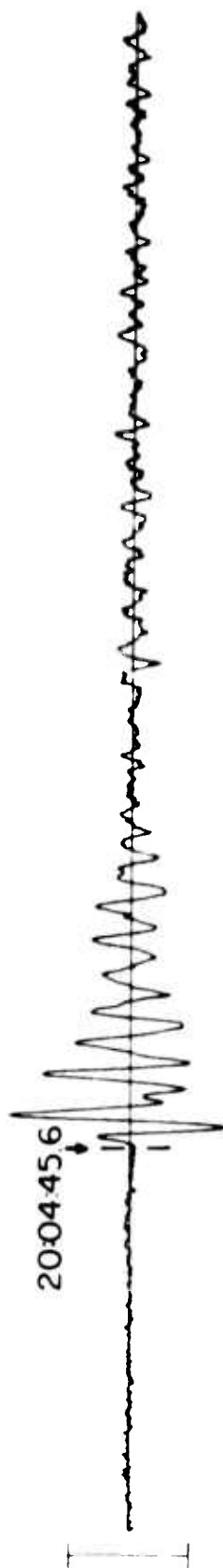
Average long-period magnitude ( $M_s$ ) is based on Rayleigh wave observations in the period range of 17 to 23 seconds per cycle.



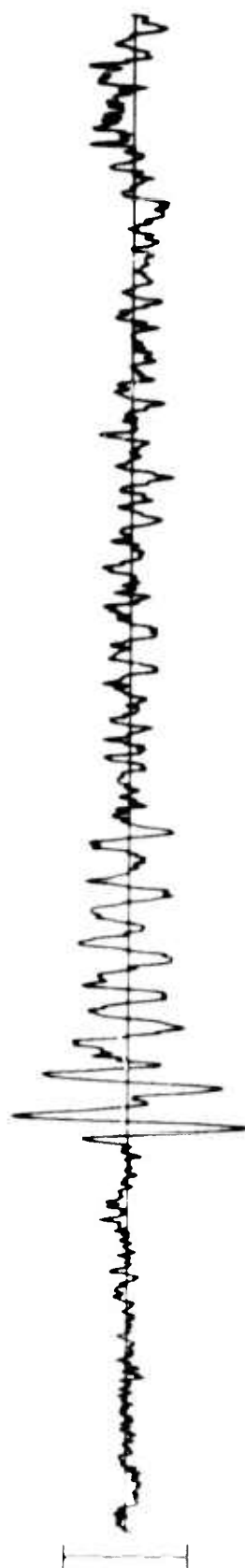
5<

RK-ON 20 DEC 75

SPZ  
853.67 MU



SPR  
655.93 MU



SPT  
117.18 MU



TIME

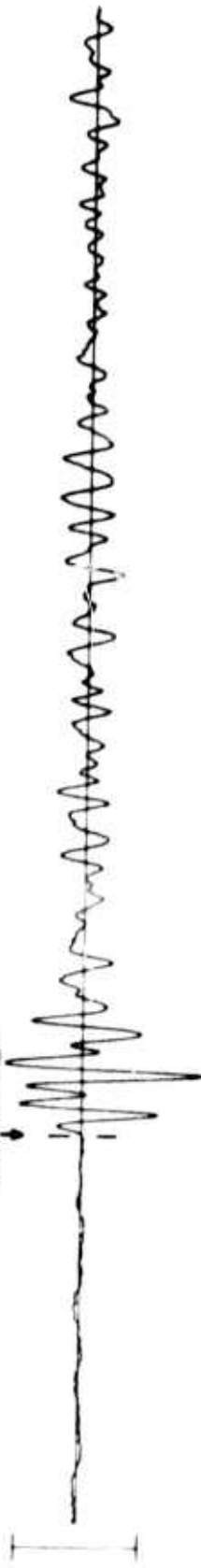


CPSO 20 DEC 75

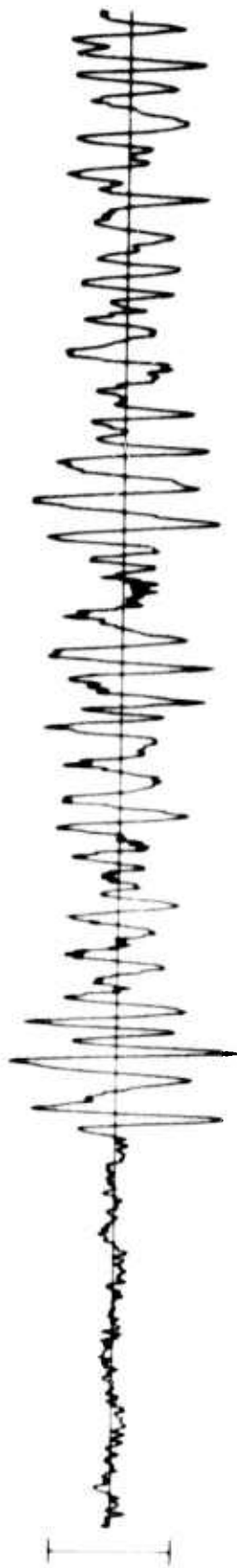
6<

SPZ  
UNKNOWN

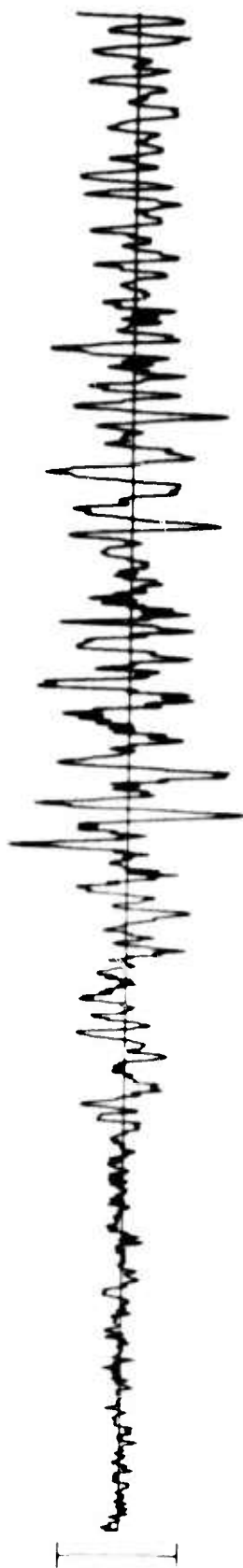
20:05:22.1



SPR  
UNKNOWN



SPT  
UNKNOWN



TIME



10 SEC

20:05:30

72

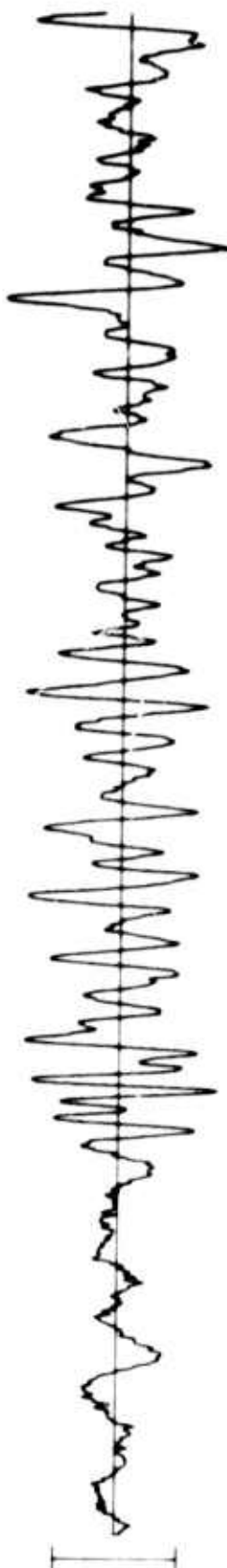
WH2YK 20 DEC 75

20:05:39.3

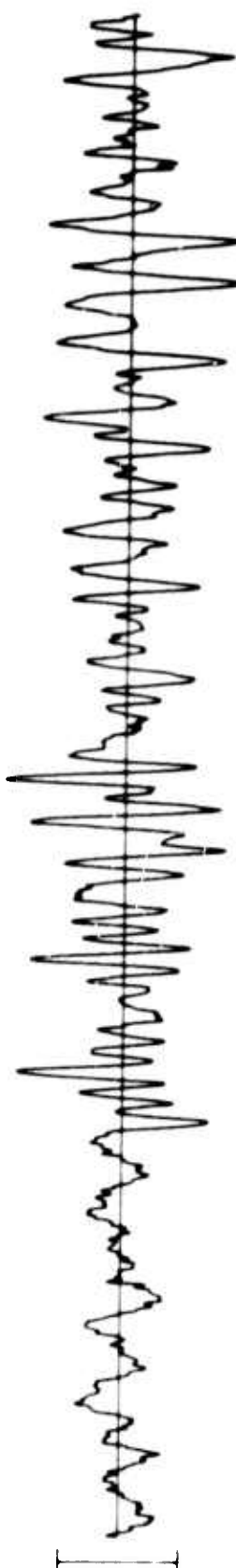
SPZ  
49.83 MU



SPR  
33.04 MU



SPT  
24.10 MU



TIME



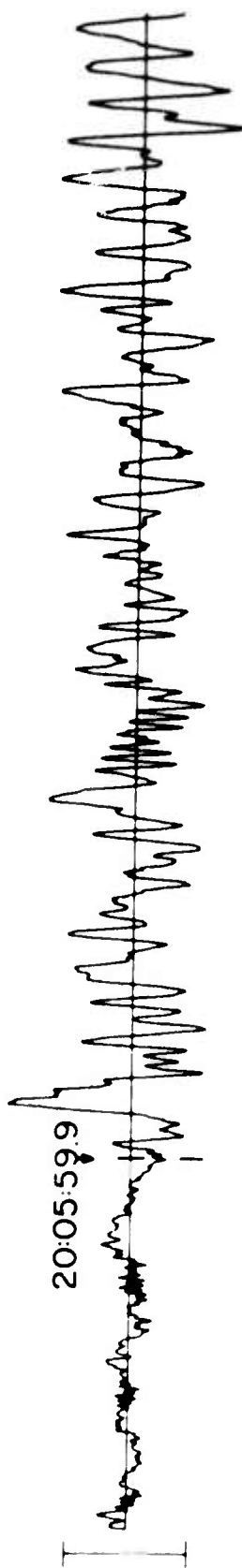
IC SEC

20:06:00

8<

FN-WV 20 DEC 75

SPZ  
50.10 MU



SPR  
34.05 MU



SPT  
23.70 MU



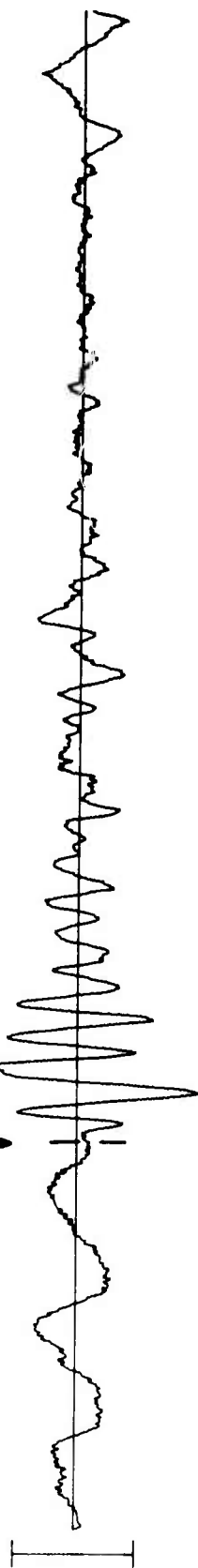
TIME



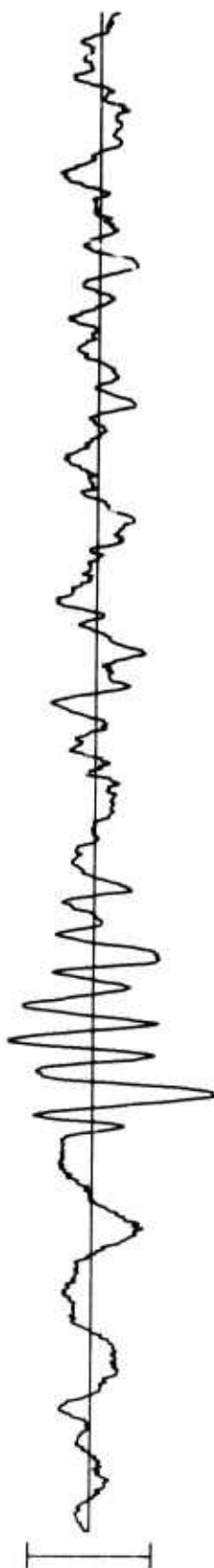
HN-ME 20 DEC 75 9<

SPZ  
159.27 MU

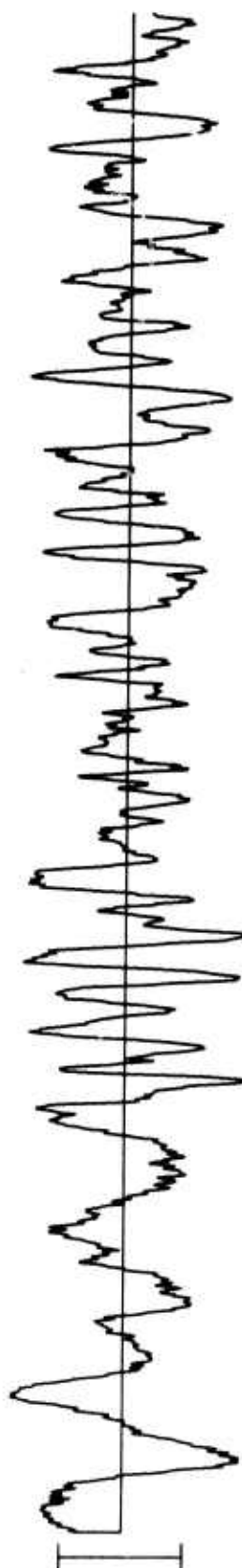
20:07:07.8



SPR  
119.33 MU



SPT  
35.56 MU



TIME

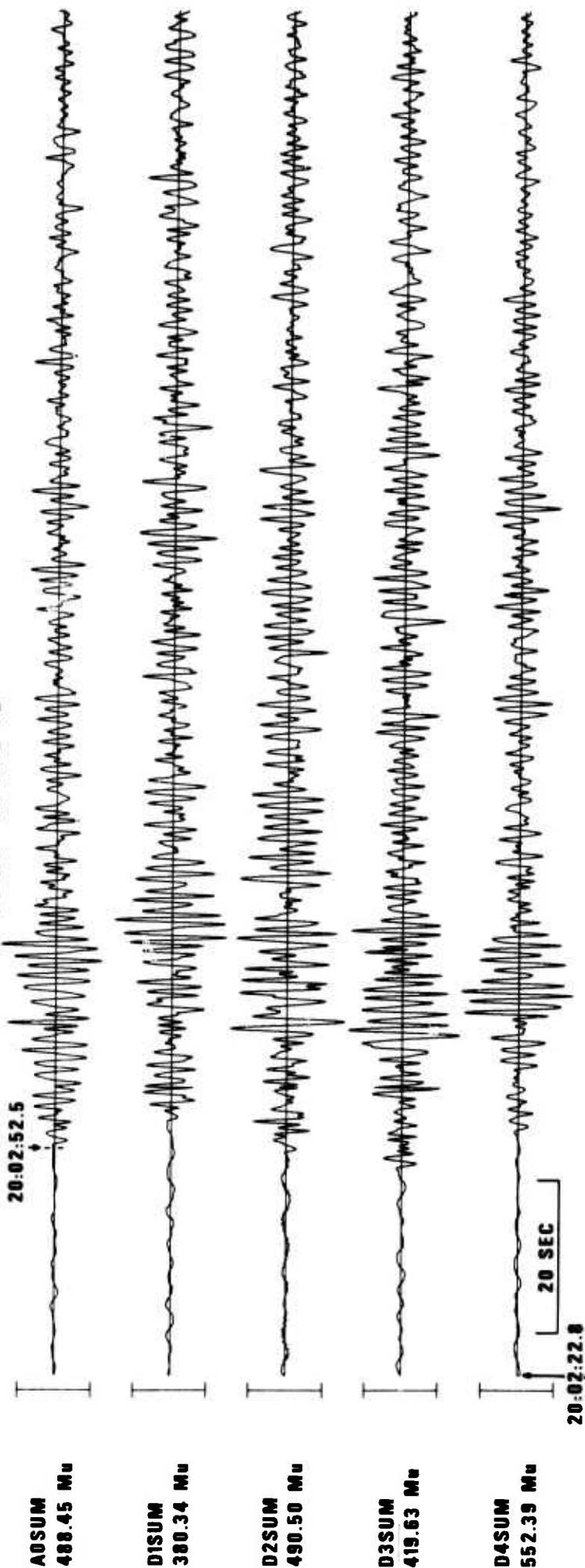


10 SEC

20:07:30

10<

LASA INFINITE VELOCITY SUBARRAY SUMS 20 DEC 75



11<

NORSAR EVENT FILE

1975 DEC 20

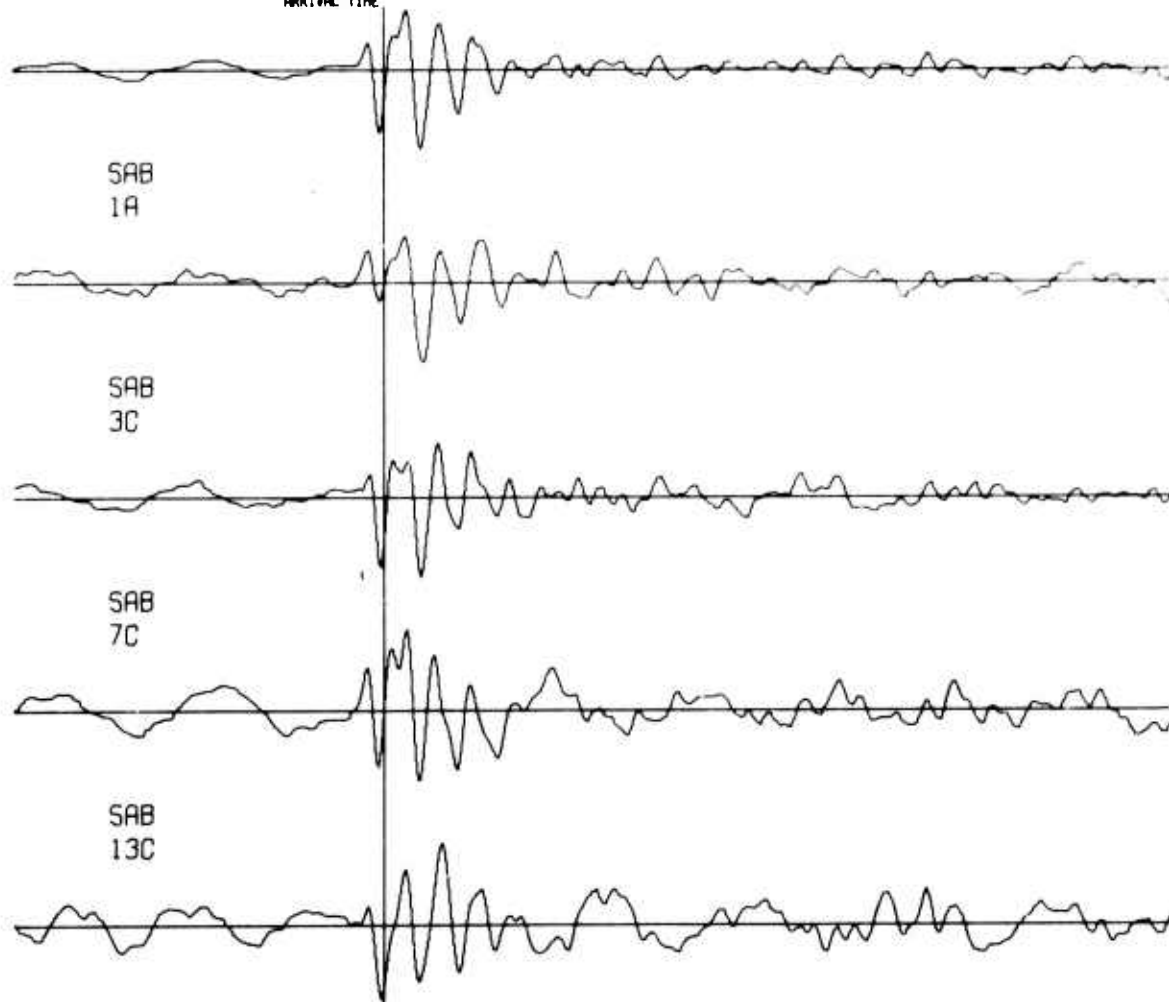
EPX NO. 61600 ARR. 20.11.33.4 38.2N 115.6W 5.4MB 33KM

DIST = 72.1 AZI = 318.2 AMP = 61.6 PER = 1.3

— = 5 SECONDS

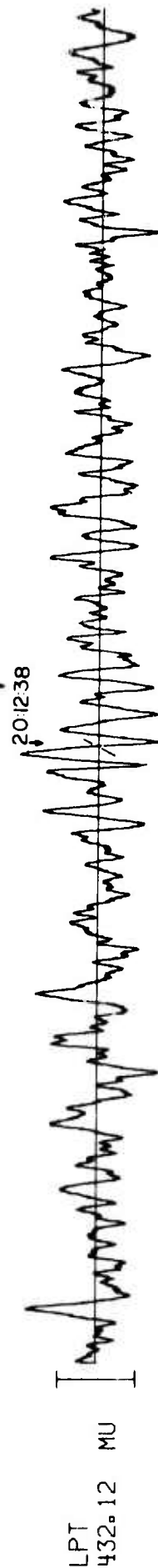
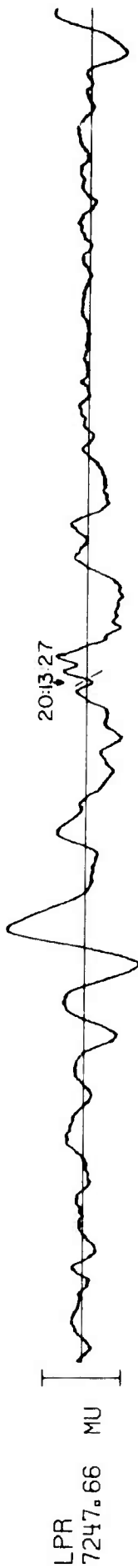
AB

ARRIVAL TIME



12<

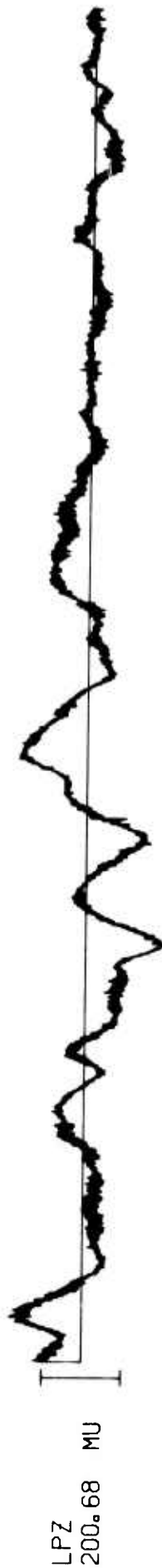
RK-ON 20 DEC 75



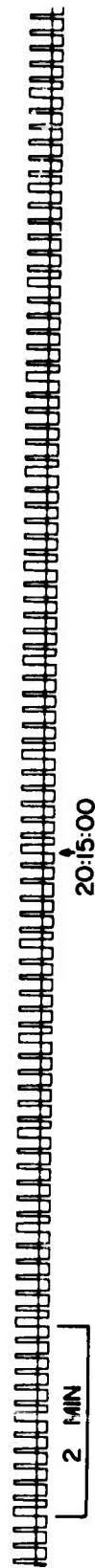


13<

CPS0 20 DEC 75



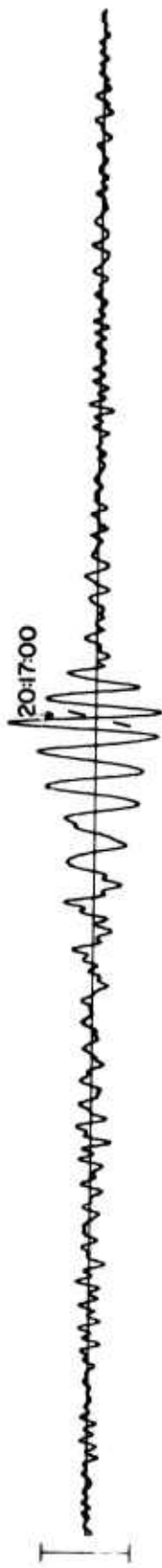
TIME



14<

WH2YK 20 DEC 75

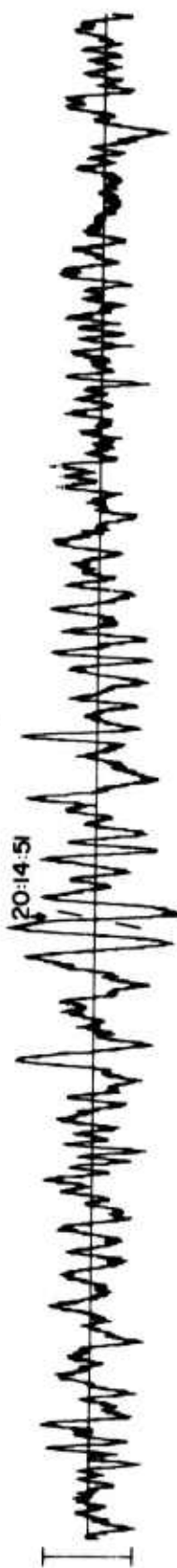
LPZ  
1346.15 MU



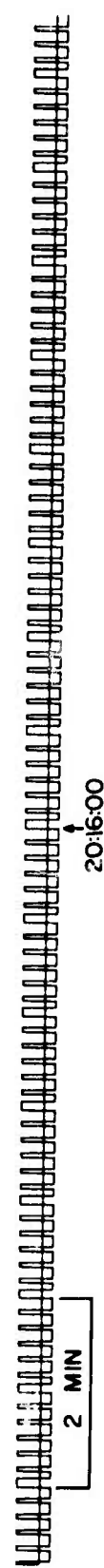
LPR  
994.36 MU



LPT  
442.42 MU

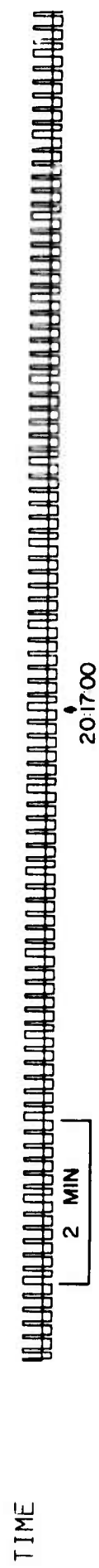


TIME



15<

FN-WV 20 DEC 75



16<

HN-ME 20 DEC 75

